

Amendments to the Specification:

Please insert the following paragraph at the beginning of the specification:

Cross-Reference to Related Applications

This application is the U.S. national stage application of International Application PCT/US04/031221, filed September 22, 2004, which international application was published on April 7, 2005, as International Publication WO2005/031780 in the English language. The International Application claims the benefit of U.K. Application No. GB0322116.5, filed September 22, 2003.

Please replace the paragraph at page 2, line 35 with the following amended paragraph:

The present invention discloses a tunneling diode having a band gap material[[.]]as the collector, or having a metal electrode coated by a film of band gap material with a thickness greater than the mean distance of relaxation of tunneled emitter electrons (~10nm or more). This increases the tunneling of electrons having greater energy than the Fermi level from emitter to collector, leading to an increase in the efficiency of heat pumping or power generation by the diode. In the context of this invention, the term "band gap material" is defined as a crystal material having a filled zero temperature valence band and an empty conductive band. The band gap material may be a material such as a dielectric or semiconductor.